

REMARKS

Claims 1-3 are all the claims pending in the application.

The present invention is directed to the management of resources in a satellite telecommunication system, the resources typically comprising the uplink bandwidth, downlink bandwidth and the onboard switch. Claim1 requires that the resource manager include (1) a congestion controller that assigns resources to downlinks, (2) a demand assignment device that assigns resources to uplinks, and a central entity for each satellite. The central entity is then described as including a subsystem of the congestion controller and a subsystem of the demand assignment device. In the embodiment of the invention illustrated in Fig. 4 and described at page 9 of the present application, there is a Demand Assignment Multiple Access (DAMA) subsystem comprised of a controller DAMAC and agent DAMAA, and there is a Block Admission Controller (BAC) comprised of a first subsystem BACS and a second subsystem BACD. The DAMA agent DAMAA and the first subsystem BACS of the Block Admission Controller are located at each user station. In Fig. 4, the DAMAA is illustrated conceptually as including the first subsystem BACS.

The DAMA controller DAMAC and the second subsystem BACD of the Block Admission Controller form what is referred to in the present application as a “Central Entity.” As described at lines 6-11 of page 9, the central entity can be onboard the satellite, on the ground, or dispersed amongst plural control stations. But it is a central entity in that it is shared by at least a subset of stations. In the embodiment illustrated in Fig. 4, the central entity is onboard the satellite.

As described at lines 24-29 of page 9, the subsystem BACS at each user station sends a bit rate assignment request to the central entity that represents the cumulative requirements for that station for a given downlink. This does not relate to only a single connection, nor is it the cumulative requirements of the station, which may use multiple downlinks, nor the cumulative requirements of a downlink, which may use multiple stations. It is a message relating to the cumulative requirements of all connections from a single station that use the same downlink.

The BACD in the central entity receives the bit rate assignment requests and determines a bit rate it can assign to each group of connections from each user station, and also the authorized bit rate for each switch output. This information is passed to the controller DAMAC also in the central entity, which then can determine the bit rate it can assign to groups of uplink connections.

The operation of the Prieto system can be understood from the discussion commencing at line 34 of column 7, with reference to Fig. 3 which shows the onboard processing system. A user sends a reservation query message (RQM) to the satellite, and the request is recognized by the ATM cell switch and forwarded to the media access controller (MAC) 30. As described at lines 15-54 of column 4, the RQM is a request for an uplink time slot. As described in the paragraph bridging columns 7-8, the MAC responds to the request taking into account the load on the downlink to the requested destination. As described in the paragraph beginning at line 11 of column 8, a flow-control module (FCM) monitors congestion at various switch ports and provides congestion information to the MAC 30 which can also then take this into account in deciding whether or not to grant the uplink reservation request.

While there are similarities, the arrangement and operation of the Prieto system is different from that of the present invention, and the differences are reflected in the claimed elements.

Claim 1 recites the central entity as including two subsystems, the first subsystem performing the two functions of receiving requests for necessary bit rates for a group of connections from a single user station sharing the same downlink, and determining the bit rate authorized for the group of connections. Prieto fails to satisfy this limitation in that (1) the request messages in Prieto are for uplink bandwidth, not downlink, and (2) the request messages each relate to a single connection and not to a group of connections from the station that all share the same downlink. Because the MAC in Prieto does receive the requests for all uplink connections, the MAC can estimate the downlink bandwidth load and can take this into account in granting the uplink requests as discussed in the paragraph bridging columns 7-8 of Prieto, but there is no suggestion in Prieto to modify its system so that the request messages would be for cumulative downlink bandwidth instead of individual uplink bandwidth.

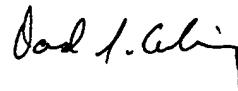
Prieto discloses a congestion control function, described at lines 11-34 of column 8 and shown at 38 in Fig. 3, which is essentially similar to the congestion control acknowledged as prior art in Fig. 3 of the present application. As in Fig. 3 of the present application, the DAMA system handles requests for uplink resources and takes into account congestion. But the present invention differs in that the request messages themselves are for cumulative downlink bandwidth and are sent to the congestion controller subsystem BACD rather than to the uplink demand assignment subsystem DAMAC. The invention as defined in claim 1, and therefore in its dependent claims 2-3, is neither anticipated by nor obvious from the prior art of record.

Amendment Under 37 C.F.R. § 1.111
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In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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